



## Review Article

# Use Of Herbal Medication & Home Remedies In The Management Of Migraine: A Comprehensive Review

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### ABSTRACT

Migraine, a chronic neurological disorder characterized by recurrent severe headaches, poses a substantial global health burden. It is typically accompanied by other symptoms, such as nausea, vomiting, and sensitivity to light and sound. This is a widespread and sometimes very disabling problem that impacts millions of people all over the world. Synthetic treatments for migraines primarily consist of medications that are specifically designed to relieve migraine symptoms or prevent migraine attacks. These synthetic medications are often prescribed by healthcare providers, can help relieve or prevent migraine headaches. However, these medications may have side effects. In this comprehensive review article, some common synthetic migraine treatments and their possible side effects like nausea/vomiting, dizziness, drowsiness, stomach upset, heartburn, or mild gastrointestinal discomfort etc. explained in simple terms. To overcome this side effects, show by synthetic medication increase the importance of use of herbal medication and home remedies in the management of migraine, as an alternative or complementary approach to synthetic drugs, has gained attention in recent years. Herbal medication is used in management because they show lesser side effect, safe and eco-friendly, permanent cure, and cheap than synthetic drugs. This review focused on herbal medication and home remedies which helps to reader to understand

### INTRODUCTION

Migraine is a kind of headache where you get strong, throbbing pain on one side of your head again and again. This pain happens because some nerves inside the blood vessels in your brain's protective layers (called meninges) get active. Migraines often come in the morning, especially

when you just wake up. Some individuals get them at certain times, like before their monthly period or after a tough workweek. After a migraine, many people feel very tired, but they usually feel just fine when they're not having an attack. <sup>(1)</sup> Some individuals see strange things like zigzag lines or flashing lights before or during a migraine.

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Migraine is most common, with more than 10% of people worldwide getting it. It usually happens to individuals between 20 and 50 years old and is about three times more likely in women than men. In a big survey in the US, 17.1% of women and 5.6% of men said they've had migraine symptoms. (2)

Several factors can make it more likely for you to get a migraine. These factors can start the headache, and they're different for everyone. Some of these factors include:

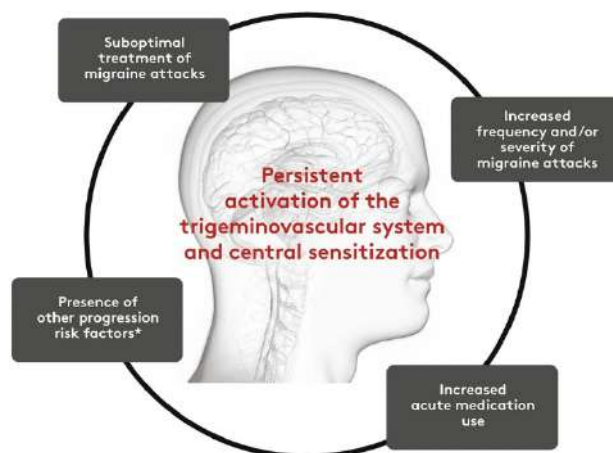
**Biological risk factors and multimorbidity-** Based upon current information, migraines have lots of factor that can increase the chances of getting them and making them worse. List of different factors linked to the development and worsening of migraines are enlisted below.

- Hormonal Imbalances
- Metabolic Factors
- Genetic and Epigenetic Factors
- Smoking, Alcohol, and Substance Abuse Disorder
- Age and Sex
- Sleep Disorders
- Fatigue
- Eating Disorders
- Cardiovascular Diseases
- Movement Disorders
- Neurological Disorders
- Gastrointestinal Disorders

**Psychological risk factors and multimorbidity-** For more than a hundred years, people have been talking about how migraine and certain psychological factors are connected. This includes things like being a perfectionist, feeling really anxious, keeping your anger hidden, and having a sad mood.

- Stress
- Anxiety Disorders
- General Anxiety Disorder
- Panic Disorder

- Obsessive-Compulsive Disorder
- Post-traumatic stress disorder
- Personality Traits
- Bipolar Disorder
- Depression
- Attention Deficit Hyperactivity Disorder
- Suicide (3)



**Fig 1. A model of migraine disease progression.** (4)

#### Types of migraine -

Migraine is a complex condition influenced by our genes. It brings intense headaches, often on one side, with nausea, and being extra sensitive to light and sound. The word 'migraine' comes from the Greek 'hemicrania,' later turning into 'hemigranea' in Latin and 'migraine' in French. Migraines can make it tough to work and do everyday stuff. They're like complex brain events that happen over hours to days and usually come back. The most common type is without any warning signs (aura) and makes up 75% of cases. (5)

According to the headache classification committee of the International Headache Society migraines can be classified into subtypes. These subtypes are given below:

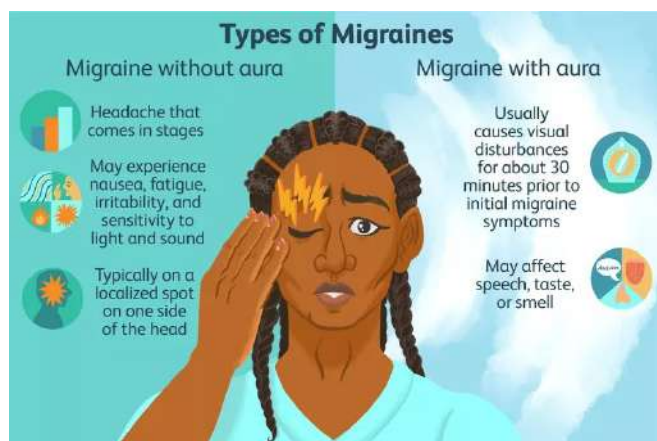


Fig 2. Types of migraine <sup>(6)</sup>

**Ocular migraine (aka retinal migraine)-** This type of migraine causes repeated episodes of weird vision stuff in just one eye, explains Dr. Brian Grosberg, who heads the Montefiore Headache Center in New York City. Individual might see things like blind spots, temporary blindness, or flickering lights. The good news is that these symptoms are often painless and don't last long, says Gary Heiting, an eye expert and senior editor of All About Vision. These symptoms usually stick around for about 30 minutes. <sup>(7)</sup>

**Hemiplegic migraine-** This is a rare type of migraine where you not only get a headache but also one-sided weakness. Usually, migraines show visual signs, but this one's different—it makes your muscles weak on one side of your body. Sometimes, it comes with other aura stuff like vision problems, trouble speaking, or strange feelings in your body. <sup>(8)</sup>

**Migraine with brainstem aura (formerly known as basilar migraine)-** When someone has a migraine with these brainstem symptoms, they usually also have the usual warning signs before the headache. So, for some people, they get two kinds of migraines—one with the typical warning signs and one with these brainstem symptoms. Doctors should consider both "Migraine with typical aura" and "Migraine with brainstem aura" in these cases. Many symptoms and misinterpretation mentioned in criterion B1 might

happen when someone's anxious or breathing fast, so it can be easy to get them mixed up. <sup>(9)</sup>

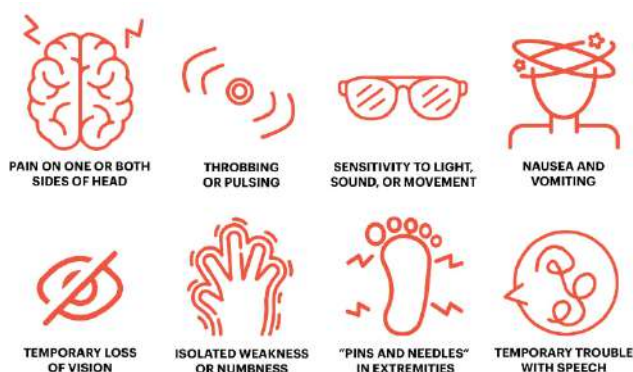
**Menstrual migraine-** When you get a migraine before your period, it's because your estrogen hormone levels drop really fast, and that's what causes it. The UK's National Health Service (NHS) says that over half of women who get migraines can see a link between their symptoms and their monthly cycle. <sup>(10,11)</sup>

**Abdominal migraine-** Abdominal migraines can give children a lot of belly pain that comes and goes. The pain is usually in the middle or around the belly button and might come with other things like a headache, not feeling hungry, feeling sick, throwing up, or looking pale. Even though there are rules for diagnosing it, like the Rome IV and headache guidelines, people often don't realize it's happening. <sup>(12)</sup>

**Vestibular migraine-** Vestibular migraines are a top reason for feeling dizzy and unsteady. They can last for a little while, from a few seconds to a few days, and sometimes they come without a headache. When the dizziness sticks around, doctors might use regular drugs that help with dizziness and nausea. <sup>(13)</sup>

**Chronic migraine-** Chronic migraine is when you have migraine headaches on 15 or more days each month, and it's really tough to deal with. People with chronic migraine often start with their regular doctor, but they may end up seeing specialists. In these cases, many people with chronic migraine also use pain medications too often, like certain painkillers, opioids, or migraine drugs, at least 10 days a month. <sup>(14)</sup>

**Symptoms-** Migraines can happen to kids, teenagers, and grown-ups. They can come in four stages: warning signs (prodrome), unusual sights or feelings (aura), the headache itself (attack), and the time after (post-drome). But not everyone with migraines has all these stages.



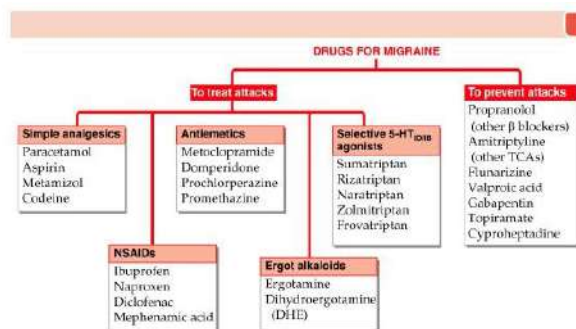
**Fig 3. Common migraine symptoms** <sup>(15)</sup>

1. Pro-drome- A Day or two before a migraine hits, you might pick up on some small hints that tell you it's coming, like:
  - Feeling constipated.
  - Mood changing, from feeling down to extra happy.
  - Craving certain foods.
  - Your neck getting stiff.
  - Holding onto extra water.
2. Aura- Before or during migraines, some individual experience something called an "aura." Auras are like temporary issues with the nervous system. They mostly affect your vision, but they can mess with other things too. Each symptom starts slowly, gets stronger over a few minutes, and can stick around for up to an hour. Auras during migraines can include stuff like:
  - Seeing sparkly lights, shiny spots, or weird shapes.
  - Losing your vision for a bit.
  - Feeling like your arm or leg is all tingly, like pins and needles.
  - Your face or one side of your body getting weak or numb.
  - Trouble speaking.
3. Attack- If you don't do anything about it, a migraine can hang around for about 4 to 72 hours. How often you get migraines isn't the same for everyone. They might come once in a while or show up many times a month.

When you're in the middle of a migraine, you might have:

- Pain, which is usually on one side of your head but sometimes on both sides.
  - A pain that feels like a strong throb.
  - Feeling like lights, sounds, and sometimes even smells and touches bother you.
  - Feeling like you're going to throw up.
4. Post-drome- Once a migraine is over, you might feel really tired and fuzzy, like your energy got zapped, & it could last for about a day. But for some folks, they might feel super happy afterward. If you move your head really fast, it might make the pain come back for a short time. <sup>(16)</sup>

**Synthetic Medication for Migraine-** Antimigraine drugs are special medicines designed to either make the pain and discomfort of a migraine attack less severe or to stop them from happening in the first place. Some of these medicines are used to treat the symptoms of a migraine when it's happening, while others are taken regularly to prevent future migraine attacks. <sup>(17)</sup>



**Fig 4. Classification antimigraine drug** <sup>(18)</sup>

#### Abortive Treatments-

- **The Triptans-** Triptans like zolmitriptan, sumatriptan, eletriptan, frovatriptan, almotriptan, naratriptan, rizatriptan, and are some of the most commonly used medicines for treating migraines. They help to prevent the release of substances that cause



inflammation in your blood vessels and reduce brain activity linked to migraine pain. The usual doses are: sumatriptan (25–100 mg, or 5–20 mg as a nasal spray), almotriptan (6.25–12.5 mg).

- **Ergotamine-** Ergotamine works by stimulate serotonin receptors known as 5-HT-1B/1D. It does its work kind of like the triptans do. This medicine is used when a migraine is happening, and you can take it as a pill in 1 or 2 mg doses, or as a suppository.
- **Dihydroergotamine-** Dihydroergotamine is used to stop a migraine when it's happening. It works by stimulate serotonin receptors called 5-HT-1B/1D, sort of like the triptans. You can get it through a vein or a muscle with a 1 mg dose, or as a nasal spray with 0.5 mg. There's also an inhalable form of this drug.
- **Nonsteroidal anti-inflammatory drugs-** Drugs like aspirin, naproxen, and ibuprofen, known as NSAIDs, can be helpful on their own or when used with other medicines to treat migraines. They work by blocking something called cyclooxygenase, which helps with the pain. You take these drugs to stop a migraine when it's happening. The usual doses are about 900 mg for aspirin, 500–1000 mg for naproxen, and 400–800 mg for ibuprofen.
- **Isometheptene/Dichloralphenazone/Acetaminophen-** Isometheptene is a type of medicine that affects both alpha and beta receptors in your body. It's believed to help with migraines by making your blood vessels less wide. This medication combo is used to stop a migraine attack in its tracks. It contains three different drugs: acetaminophen at 325 mg, dichloralphenazone at 100 mg, and isometheptene at 65 mg.

- **Tramadol-** It is a medicine that does two things: it lightly activates certain receptors in your brain (mu opioid receptors) and also stops norepinephrine and serotonin from being taken back up by your nerve cells. It's used to stop a migraine attack. For this, a regular dose is about 50 mg of tramadol.
- **Caffeine-** Caffeine isn't very helpful on its own for migraines, but when it's combined with ergotamine, it is able to show the effect. Caffeine works by blocking something called adenosine receptors and helps your body soak up ergotamine better. When you use caffeine along with ergotamine to stop a migraine attack, you typically take a 100 mg dose of caffeine.
- **Promethazine-** Promethazine and similar drugs like phenothiazines are used because they show antiemetic action. When treating migraines, promethazine is often given at a dose of 12.5 mg to treat migraine. <sup>(19,20)</sup>

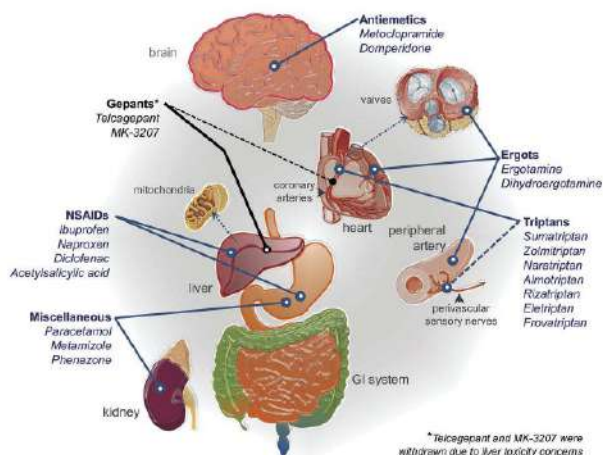
#### Preventive Treatments-

- **Beta adrenoceptor antagonists-** Beta blockers like propranolol, timolol, and metoprolol are taken in advance to prevent migraines from happening. The usual doses for propranolol are 40–120 mg taken twice a day, and for metoprolol, it's 100–200 mg once a day.
- **Amitriptyline-** Amitriptyline, a tricyclic antidepressant, can make you really sleepy, so it's usually taken before bedtime. The regular dose is 25–75 mg by mouth. People use it ahead of time to prevent migraines, although we're not exactly sure how it works. Sometimes, other tricyclic antidepressants can also be used for the same purpose.
- **Valproic acid (Divalproex)-** Valproic acid does a couple of things: it stops sodium channels in your nerves and also calcium channels known as 'T' type channels. But we're not sure if these actions are what make

it work for preventing migraines when taken regularly.

- **Methysergide-** Methysergide is a medicine that works against serotonin receptors called 5-HT-2 receptors. It's believed to stop the blood vessels from getting too narrow because of this chemical, especially during the early signs of a migraine. Methysergide is taken regularly to prevent migraines, with a daily dose of 1–6 mg. It's also important to take breaks from this medicine to avoid side effects, like a condition called retroperitoneal fibrosis.
- **Verapamil (calcium channel blocker)-** Verapamil is sometimes taken regularly to prevent migraines, but how well it works has been debated. People typically use daily doses of 160–320 mg for this purpose.
- **Botulinum toxin A-** This drug is now approved for prophylaxis against migraine, but reports suggest it doesn't work very well. (20,21)

**Side effects of synthetic medications for migraine-** Migraine medications, both synthetic and herbal, can have side effects. The specific side effects vary depending on the type of medication. Here are some common side effects associated with different classes of migraine medications:



**Fig 5. The adverse side effects observed with current migraine pharmacotherapy.** (22)

**Triptans (e.g., sumatriptan, rizatriptan):**

- Nausea
- Dizziness
- Fatigue
- Flushing or tingling sensations
- Chest tightness or pressure (rare)

**NSAIDs (e.g., ibuprofen, naproxen):**

- Stomach upset or ulcers
- Gastric bleeding (rare)
- Headache (rebound headaches if overused)

**Beta-Blockers (e.g., propranolol, metoprolol):**

- Fatigue
- Bradycardia (slow heart rate)
- Cold extremities
- Sleep disturbances

**Antidepressants (e.g., amitriptyline, venlafaxine):**

- Drowsiness
- Dry mouth
- Weight gain
- Sexual dysfunction
- Constipation

**Anticonvulsants (e.g., topiramate, valproic acid):**

- Dizziness
- Cognitive difficulties
- Weight loss (topiramate)
- Hair loss (valproic acid)
- Mood changes

**Calcium Channel Blockers (e.g., verapamil):**

- Constipation
- Low blood pressure
- Swelling in the ankles and feet

**Triptans may also have rare side effects:**

- Serotonin syndrome (if combined with certain other drugs)
- Chest pain or tightness (23,24)

**Herbal Medication for Migraine-** Now a days herbal remedies are a common choice for treating migraines. Recent studies indicate that curcumin, citron, and coriander may have potential as

preventive options for migraines, while menthol and chamomile show promise as immediate relief treatments. <sup>(25)</sup> Herbal medicine has a long history that predates conventional medicine by many centuries. It originated in ancient Asia and has been used by Chinese healthcare practitioners for thousands of years. Today, some Asian countries even integrate herbal remedies with conventional medical care in their public healthcare systems. When it comes to managing migraines preventively, natural products play a key role. These products often contain essential vitamins, minerals, and herbs with active ingredients that can be quite beneficial. Some of the most effective ones include: <sup>(26)</sup>

**Zingiberaceae Herbs and Migraine-** Ginger, an herb from the Zingiberaceae family, is one of the most clinically proven natural remedies for both preventing and alleviating migraines. This herb, native to southern and southeastern Asia, has a rich history of use in treating conditions like rheumatic pain, headaches, indigestion, and motion sickness, with modern clinical trials confirming its effectiveness to varying degrees.



**Dose-** The typical suggested amount of ginger for migraine relief is 1,000 mg of powdered ginger in a capsule, 1–2 mL of tincture, or 2–3 mL of glycerite, or you can enjoy a cup of ginger tea (made from 2–3 grams of the rhizome) as soon as you feel a migraine coming on. If your symptoms persist after two hours, it's a good idea to take a second dose. <sup>(27)</sup>

**Tanacetum parthenium (feverfew)-** Feverfew, a member of the Asteraceae family, is one of the most well-known herbs for preventing and treating

migraines today. Originally native to central Eurasia, it's now grown extensively in North America. Clinical trials on using feverfew leaves to prevent migraines began in the 1980s. Before that, it was relatively unfamiliar in Western herbal practices, though its traditional uses included treating rheumatic conditions and, as the name implies, reducing fevers.



**Dose-** In a double-blind, randomized trial with 49 American migraine patients, a mix of 100 mg of feverfew, 400 mg of riboflavin, and 300 mg of magnesium didn't perform any better than just 25 mg of riboflavin in decreasing the frequency of migraines. Both combinations helped around 42–44% of patients achieve a more than 50% reduction in their migraine occurrences. <sup>(27)</sup>

**Ergot: From Herb to Drug-** *Claviceps purpurea*, often called the ergot of rye (although it can infect wheat, triticale, and barley too), and other species of this fungus are a fascinating study in ancient herbal medicine. They're also a significant source of disease. Over time, they've contributed to the development of a diverse class of highly beneficial, multipurpose medications. This class includes natural alkaloids like ergotamine and ergometrine (ergonovine) as well as synthetic versions like methylergometrine (methylergonovine), dihydroergotamine, ergoloid mesylates, methysergide, cabergoline, pergolide, and bromocriptine.





**Dose-** Additionally, oral ergotamine has notably low absorption rates, but this can be enhanced when combined with caffeine. Consequently, it is primarily administered in the form of a suppository, tablet, or sublingual tablet, with a dosage of 1–2 mg combined with 100 mg of caffeine. It's typically taken as soon as the initial signs of an aura or migraine pain appear. <sup>(27)</sup>

**Cannabis sativa (cannabis, marijuana)-** Cannabis sativa, commonly known as cannabis or marijuana, has a long history as a medicinal plant in the Cannabaceae family. Despite its controversial and often contradictory legal status worldwide, the increasing legalization and improved research opportunities are shedding light on its potential benefits, including its historical use for migraines. Ancient records indicate that cannabis has been considered helpful for migraine relief, and even the renowned Canadian-American physician William Osler (1849–1919) hailed cannabis as "probably the most satisfactory remedy" for migraines in his significant work, "The Principles and Practice of Medicine."



**Dose-** For individuals new to cannabis, it's advisable to begin with a low dose and gradually increase it to prevent unwanted side effects. Typically, starting with products that contain 1 mg

of THC and 1–2 mg of CBD per dose is recommended. You can adjust this dosage as needed, either per migraine attack (for immediate relief) or on a weekly basis (for prevention), until you find the right balance of effectiveness and tolerability. <sup>(27)</sup>

**Petasites spp. (butterbur)-** Butterbur, belonging to the Asteraceae family, is native to regions encircling the Northern Hemisphere. It's occasionally confused with another plant, Tussilago farfara, known as coltsfoot, even though they look similar, their properties are entirely different.



**Dose-** In a study involving 108 children with migraines, they were provided with 50–150 mg of butterbur root extract daily, depending on their age. After four months, 77% of them reported a minimum of a 50% decrease in migraine attack frequency. Another study involved 58 children with migraines who were given either 50–100 mg of butterbur root extract per day, music therapy, or a placebo for 12 weeks. <sup>(28)</sup>

**Home Remedies for Headache and Migraine Relief-** Numerous home remedies can offer relief from migraine symptoms and potentially prevent future episodes. These remedies encompass dietary adjustments, essential oils, acupressure techniques, and various other strategies. Remember that migraine triggers and responses can vary among individuals, so it's essential to find what works best for you. If your migraines are severe, frequent, or don't respond to home



remedies, consult a healthcare professional for proper diagnosis and treatment. <sup>(29)</sup>

- Staying hydrated and eating regular meals can help prevent headaches and migraines.
- Including foods with omega-3 fatty acids in your diet may reduce the severity of headaches.
- Taking magnesium supplements may lower the frequency and intensity of migraines.
- Trying acupuncture techniques can provide relief from tense muscles.
- • Massaging your scalp may help alleviate migraine pain.
- Engaging in short-term yoga sessions has been shown to reduce clinical migraine symptoms.
- Massaging the muscles in your neck and shoulders can help relieve tension and reduce migraine pain.
- B vitamins may be effective in reducing the frequency and severity of migraines.
- Getting adequate sleep is another important way to prevent migraine episodes. <sup>(30)</sup>

## CONCLUSION

Migraine is a neurological disorder that causes severe, recurring headaches along with symptoms like nausea, vomiting, and sensitivity to light and sound. These headaches, called migraine attacks, can be very disabling and last for hours to days. Migraines are quite common and affect millions of people worldwide. They can be managed through a combination of various synthetic medication and sometimes combination therapies. While synthetic medications for migraines are effective, they often come with significant side effects. Therefore, it's crucial to inform migraine sufferers about the potential benefits of using herbal remedies with antimigraine properties as an alternative treatment. This comprehensive review has highlighted

readily available herbal medications and easy-to-implement home remedies. The herbal medications discussed in this review exhibit strong antimigraine properties with minimal side effects. This makes herbal medications a preferable choice over synthetic drugs to minimize the risk of serious side effects and adverse reactions.

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